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EDITORIAL CHAT.

Up to September 24th, there were 117 students registered in the Department of Agriculture and Domestic Science, compared with 119 on the same date last year. Of these, 48 are new, and 69 are old students, as compared with 63 new and 56 old students last year. Of the 48 new students, 12 are young women, who have entered the Course in Domestic Science, and 36 are young men in the regular Agricultural Course, as compared with 21 young women and 42 young men last year.

While so far the number of students entering the Agriculture and Domestic Science Courses is less than the number at the same date last year, a sufficient number to swell these figures somewhat beyond what they were last year, is expected to register later in the year.

The spasmodic growth in the number of students in this department, due to the completion of Townshend Hall, is a thing of the past, and from this on the increase is expected to be just as certain but more uniform than formerly.

While the number of students entering the Domestic Science Course is less this year than last, the number of young women in the other courses who are electing work in this Department has in no wise decreased.

However varied may be the aims and interests of the students of the University, athletics are something in which all should have a common interest. In the fall the interest always centers in the foot ball team, by which the standing of the University among other schools is judged to a greater extent than many of us think.

Whatever our personal opinion of the game may be, the fact remains that any school is rated, to a great extent, according to the kind of athletic teams it supports. They therefore demand and deserve the loyal support of Faculty and students.

The prospects for a representative team this year were never brighter. Nearly all last year's team are back, together with several experienced players from other schools. From twenty-five to thirty-five men are out for practice every evening.

Coach Eckstrom was unavoidably delayed in the East until just three days before the opening game, but in that short time he demonstrated what a competent coach can do with good material. Mr. Eckstrom is an old player from Dartmouth, and was coach at Kenyon last year. He is thoroughly acquainted with the theory and practice of modern foot ball as seen in the East-

ern Colleges, and seems to instill into the men a spirit of courage and confidence.

The opening game of the season was played with Otterbein, on the University field, Saturday, September 30th, and was a surprise to the visitors as well as to the 1100 spectators. The visiting team was outplayed at every point. The 'Varsity's goal was at no time seriously threatened, while they pushed their opponents across their line five times, making the score 30-0 in favor of O. S. U.

The schedule for the season is an excellent one, and is as follows:

Sept. 30—Otterbein University at Columbus.

Oct. 7—Wittenberg College at Columbus.

Oct 14—Case School of Science at Cleveland.

Oct. 21—Ohio University at Columbus.

Oct. 28—Oberlin College at Oberlin.

Nov. 4—Western Reserve University at Columbus.

Nov. 11—Marietta College at Columbus.

Nov. 18—Ohio Medical University at Columbus.

Thanksgiving—Kenyon College at Columbus.

Under the direction of Mr. Luke the Botanical greenhouse is being rapidly prepared for winter. New benches are being placed in the propagating house and the steam pipes are being placed and refitted. The roof is being repaired wherever needed and outside plants are being moved in or cuttings made from them before frost comes.

Mr. Luke is bringing together an interesting and instructive collection of all classes of plants, and is doing everything he can to make the conservatory one of the chief attractions of the University in winter as well as in summer.

We note a most able article by Charles Richard Dodge in the August number of the *American Farmer* magazine, upon the Paris Exposition.

Mr. Dodge has complete control of the United States exhibit at the Exposition, and he is making arrangements for one of the most beautiful, as well as the most extensive and instructive exhibits representing the agricultural industries of the United States, that has ever been made. Forty-five thousand of the 300,000 square feet allotted to the United States will be set aside for the Agricultural exhibit alone; and justly so, for in 1898 the agricultural exports from this country were seventy per cent of the total exports.

The opportunity for greatly increasing foreign demand for the products of the American farm was never better, and a large increase in our agricultural reports, due to this Exposition, can be safely predicted.

Every farmer in this broad land will receive some benefit, directly or indirectly, from this International Exposition, and none should feel that they have no interest there. Nations mingle with nations, compare their progress and civilization, and mankind reaps the benefit. The Paris Exposition in 1900 will do a vast deal in bringing about that "universal peace" so much talked about and desired by all.

Columbus Horticultural Society.

The Columbus Horticultural Society held its first meeting after the Summer vacation at Horticultural Hall Saturday, September 30th. The different members related their Summer experiences and observations. Professor Hunt gave a few notes on his recent trip to California and promised to prepare a paper on it for a later meeting. Dr.

Aldrich exhibited several new varieties of apples and spoke of their merits. Mr. Streeper exhibited a specimen of Alphonse Bouvier canna that was eight feet high, and some specimens of salsify that he had grown without plowing or digging up the earth before planting.

The main paper of the program was by Mr. Harry Ballou on "Cannas; the Varieties to Select and How to Grow Them." At the business meeting the resignation of Mr. J. F. Cunningham as Secretary was accepted and Homer C. Price was elected to fill the vacancy.

Hon. James Wilson.

Hon. James Wilson was born in 1835, in Ayrshire, Scotland. The family came to Connecticut in 1852 and settled on a farm near Norwich. They took up Government land in Tama County, Iowa, and in 1854 the family moved to their new Western home.

The father had the Scotchman's love for live stock and began at an early day to fatten stock for the Eastern markets. Diversified farming was pursued, dairying being a prominent feature.

Under these conditions, James, the eldest of 14 children—seven boys and seven girls—attained his majority. He received his education in the public schools and at Iowa College, but "graduated between the plow handles." It was said of him at this time that he could run a straighter furrow or make a better speech on the political issues of the day than any other man in the county.

Mr. Wilson's ability and practical good sense were soon recognized, and he was successively sent to the twelfth, thirteenth and fourteenth Iowa General Assembly, being Speaker of the House in the latter. He also served with credit on the Iowa Railway Commission. He was elected to, and served with eminent ability in the forty-third, forty-fourth

and forty-eighth Congresses, where he took rank as one of the foremost parliamentarians, and his services in the interest of agriculture were highly commendable.

He was always a prominent and recognized leader in educational work. He served as Trustee of the Iowa State University, Coe College, and Western College, and in 1891 was elected Director of the Experiment Station and Professor of Agriculture in the University at Ames. These positions he filled with marked ability.

While Mr. Wilson has long been identified with State and National politics, he is none the less a successful farmer. His 1000-acre farm in Tama County, Iowa, is a model one, and is known as one of the leading fine stock farms in the West.

In 1897, Professor Wilson was appointed by President McKinley to the Cabinet position of Secretary of Agriculture,—the right man in the right place. This was over two years ago, and the wisdom of the President's selection becomes more apparent every day.

All over the country new industries are springing up in response to the guidance of a master mind; laws and appropriations favorable to agriculture multiply and increase, under his direction; he is acknowledged to be the most influential man in the Cabinet. Truly the prospects for American agriculture were never better.

President's Inaugural Address Before Townshend Literary Society, September 22, 1899.

BY F. W. TAYLOR.

It is the custom of our Literary Society to impose upon its newly-elected President the obligation of giving a so-

called inaugural address at the first regular meeting of the Society after his election. And it is in that capacity that I come before you this evening.

There are a great many things that might be said on an occasion of this kind. I might tell you something of the advantages of a literary training in a college course, but these, I assume, you have already learned something of. I might tell you something of the history of our Society, but this I fear would be dull and uninteresting to most of you. Again, I might tell you something of the means and ends, the ways and methods,—the *modus operandi*,—of our Society, but these I trust will soon be found out by all of you who are not already acquainted with them.

Therefore, in the few minutes that I am to speak to you I shall try and confine myself to the subject of "Thorough Preparation in College Work." If each one of you were asked the question, why have you come to college? You would undoubtedly answer: to get my education.

In this statement I hope you are correct. But the education which carries with it merely the idea of acquired knowledge is not the education which the modern college seeks to give. Alongside of this education must go the discipline of our faculties which is so essential to the "all-way round" and "all-way up" educated man, and it is this latter phase that I wish to emphasize in connection with my subject.

The distinctive work of a college is to develop thought-power in those who come to it for the education which it has to give. The college receives the student just as his mind is opening toward maturity; just as he is beginning to emerge from boyhood to manhood; the time when he perhaps for the first time becomes conscious of himself as a think-

ing man. The possibilities of mental discipline are very great. The youth is to be made a wide thinking man; a man of broad intellect; a man of superior learning, with his intellectual powers well disciplined for the tasks awaiting them. He is to be so fitted that he may easily and successfully turn his powers in whatever direction they may chance to be called. The college is to send forth the young man with his mind built,—not in the sense that there is to be no change or development afterward, but in the sense of complete readiness for his technical education which is to follow. Mind-building then is the college business, and the education of the college is the building process.

The term Commencement is a happily chosen one. In one sense it is a time of completion; the college education is finished; but in another it is really a Commencement,—the graduate now goes out into the world, and the greater education of manhood has just begun.

The course of study in college should involve two things: The one is mental discipline; the other is knowledge. The working powers of the mind must be developed, and mind power must be created. Knowledge is also essential because it is, as it were, the vehicle of thought, and the thinking mind is the thing to be secured.

Many a man is of the opinion that if he once gets a college diploma the world owes him a living. But it takes only a short time out in the world in actual life for him to find out that the world is overstocked with such debts, and that if it attempted to pay them off it would be forced to make an assignment. Any man with an ordinary intellect can slide through enough studies and fool the professors long enough to get his diploma, but the simple act of graduation carries with it little or no weight unless it

is backed up by years of discipline and hard work. It is often said that men who do poorly in school succeed out in the world, but such cases are exceptions, and our attention is called to them simply because they are exceptions. Men who do good work in college nearly always succeed after they leave college. The ability shown in college is what is looked for always. A man who goes through college and carefully receives the discipline afforded there, has from that time on more power for the concentration of his faculties, which makes ability, than he would have had had he not gone to college.

Someone has aptly said that "In proportion to the success of man, his battlefield widens." This seems very evident. We are all possessed of certain talents and powers, and just in proportion as we use our talents and concentrate our powers to bring about success, just in that proportion does the responsibility which rests upon us increase.

We have already seen something of the dependence that a good, well-rounded college education has upon the element of thorough preparation in college work. And now, right here, I believe it would not be out of place to say a word as to the need of an education and mental-training for the farmer of today, and the farmer of to-morrow, for I presume that the most of us here present expect to follow that calling in some of its phases after we leave college. There are some people who say that an education for the farmer does not pay,—that book-learning is a farce. But my friends, there is no profession on earth that allows a greater display of intellect than does farming, and nowhere is it needed more in order to increase the profits. The farmer is called upon to solve practical questions in chemistry, in botany, in soil physics, in bacteriology,

in veterinary medicine, in animal mechanics, and in fact in all the sciences. To do this he must be educated, and his education not only makes his work easier, but makes it more pleasant. There is a deal of satisfaction that comes to the farmer from seeing a plant, an insect, a bird, or an animal, and being able to name it, tell something of its life-history, and especially to know of its economic value to him. Such an education helps the farmer to appreciate the dignity of his calling, and helps to place his profession in the front rank of the world's greatest industries where it rightfully belongs. Therefore, let us see to it that we get that education which befits our calling. Let us not be content merely with the simple doing of the work assigned us, but let that work be done thoroughly, honestly, and with a feeling of interest. I once heard ex-President Scott of the University say: "Don't be satisfied with a lesson when you think you have mastered it; go over it again, —you will get something out of it and will see something in it that you had not seen before."

Thorough preparation, though it may be difficult in itself, makes our work easy, and more than that makes it enjoyable. So I say to you in the language of our unique and suggestive motto, "Peg away."

The Pollenation of Fruits by Honey Bees.

Abstract of paper by Professor Lazenby before the Association for the Advancement of Agricultural Science, August 19, 1899, at Columbus, O.:

To what extent the pollination of the blossoms of our common cultivated fruits is dependent upon the honey bee is a question of practical interest to every horticulturist.

During each spring for several years

past a series of observations bearing on this question have been made by the Horticultural Department of the University and the results are briefly as follows:

The apricot is usually the first fruit tree to blossom in this locality, and the honey bees have been seen working upon these trees quite frequently as early as April 1st. Closely following the apricots are some of our early blooming plums. The Japanese plums being the first, and some of the European varieties the latest in blooming. The pollen collecting and honey gathering period is rarely more than five or six days for any one tree, and if two or three days of this time are cloudy, rainy or windy the chances of complete pollination are greatly lessened.

Pears and peaches soon follow the apricots and earliest plums, and in turn are closely followed by the cherries. The apples are the last of our common fruit trees to bloom, but their period of blooming is somewhat longer than the other classes of fruits named.

The order of blooming of the tree fruits grown in this latitude, beginning with the first, are apricot, plum, cherries, pears, peaches and apples.

According to the frequency of visitation by honey bees the sequence would be plums, cherries, apples, peaches and pears.

Careful and repeated observations at different hours of the day show that when the weather is pleasant and bees numerous, a very large per cent of the blossoms of some of our fruit trees are visited by one or more bees, and that a very large per cent of the bees leaving the hives return either honey or pollen laden.

The flower of the garden currant seems to have little attraction for bees, but with the gooseberry they are a little

more familiar. Raspberries and blackberries are visited freely, especially the red raspberry.

Strawberries are infrequently visited by bees. They are often seen flying over the plants, probably attracted by the early and showy flowers, but they rarely light upon them.

Observations on our grounds, under essentially the same conditions, show that according to the comparative number of flowers of different fruit plants, visited by honey bees, the sequence is as follows: red raspberry, blackberry, plum, cherry, blackcap raspberry, apple, gooseberry, peach, pear, currant, strawberry.

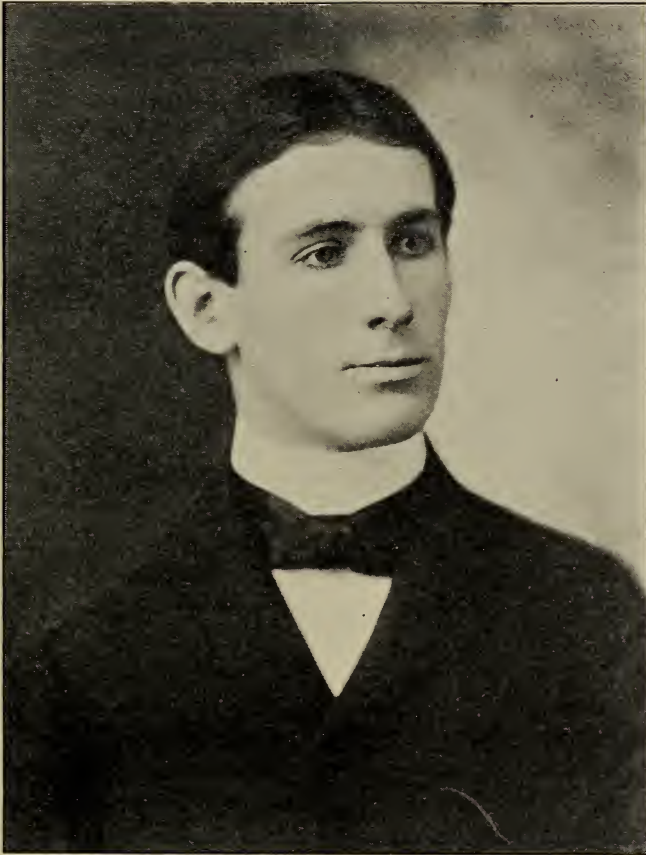
A number of bees were caught and killed as they left the hive, and each bee was weighed separately. A corresponding number were caught as they returned to the hive and likewise killed and weighed. The average weight of the outgoing bees was .079 of a gram, while the average weight of the incoming honey-laden bees was .094 of a gram. Subtracting the average weight of the outgoing from that of the incoming bees we have .022 gram as the average weight of the honey load. This is a little more than one-fourth the weight of the bee.

Similar observations were made on pollen-laden bees, and .006 of a gram was shown to be the average weight of the pollen load, although the maximum load was much greater.

The statement is frequently made that bees collect honey and pollen at the same time. My observations lead me to believe that this is not the case. Scores of pollen-bearing bees have been killed as they were entering the hive and one has never been found loaded with more honey than one is likely to find in any worker bee when it leaves the hive. The honey bee almost invariably carries a small supply of food when starting upon

a collecting flight. While, as we have seen the pollen gatherers do the light carrying work of the hive, I am firmly convinced that they are of equal if not of greater service in the work of pollination than the honey gatherers.

Painstaking countings, under many different circumstances, show that for the same time, and speaking with reference to our common fruit plants, the pollen gatherers visit from three to five times as many flowers in a given time as the honey collectors.



John Furgeson Cunningham, M. Sc.

Editor Cunningham was born in Af-ton, Iowa, in the year 1877. His father is a Presbyterian minister, and in 1881 came to Ohio, bringing his family with him. He lived at Mt. Sterling and Columbus for several years, where young Cunningham received his preliminary education.

In the fall of 1891, Mr. Cunningham entered the short Course in Agriculture at the Ohio State University. After two years in college, he remained out a

year, and returned, entering as a Sophomore in the class of 1897, in the Course of Horticulture and Forestry.

At this time he became interested in the student development of the work in agriculture, and in connection with one or two others, started the Townshend Literary Society and was its first librarian. About the same time he became a member of Horton Literary Society, and throughout his college course he was an enthusiastic member of both these societies, and besides holding sev-

eral offices in each, was President of Horton in winter term of 1896-97.

In his Junior year he represented his class as orator in the Arbor Day exercises.

His name is also connected with the founders of the Wheaton and Organic Evolution Clubs. Also the University Glee Club, with which he was connected from its founding. In this organization he sang for several years, and was Secretary and Business Manager of the club. The first concert tour which the club made was under Mr. Cunningham's management, and to him the success of this tour is due. For the last two years he has been a member of the University Male Quartet.

During his college course he was active in all athletic sports, left end on the foot ball team, and an enthusiastic tennis player; he always found time for base ball also. During the season of '97 he was manager of the second base ball team. He has always been an energetic and active member of the Y. M. C. A.

Upon Mr. Cunningham's graduation he was elected to a Fellowship in Horticulture and Forestry, and the following year was made Assistant in Horticulture and Forestry, and in this capacity he was an emphatic success.

In the fall of 1894, THE AGRICULTURAL STUDENT MAGAZINE was embarked upon the sea of journalism, with Mr. Cunningham as a department editor. Three years later he was appointed Editor in Chief and continued in this capacity until a month ago when he resigned.

For the last two years he has been Secretary of the Columbus Horticultural Society and Editor of the journal of the same. He was also Agricultural Editor of the *Columbus Press* in 1897-98.

Another movement which has felt the inspiring influence of Mr. Cunningham

is the Student Union of Ohio. He was a member of the Board of Control and President of this organization in 1897. At the last annual meeting he was elected Secretary-Treasurer, and in this capacity has the executive work of the movement.

He is a member of Phi Gamma Delta, Alpha Zeta, and Sigma Chi Fraternities.

Mr. Cunningham is a careful organizer and a graphic writer, as well as one of our most promising young agricultural scientists. When the OHIO FARMER decided to enlarge its corps of editors, Mr. Cunningham was at once selected. He is a born editor and we predict for him a brilliant career; and as a little more maturity comes to him, we feel you will find Editor Cunningham with coat off and sleeves up, working, heart and soul, for the uplifting of the American farmer and his amelioration in both a business and a social sense. Born as a leader, he will stand in the front ranks battling for the rights of the American farmer. We believe, without hesitation, the future will find Editor Cunningham one of the foremost educators, and one of the most active journalists that the farming class will have. His consistency of purpose, his love of service and his sterling manhood stamp him as a true man in the fullest sense of the word.

A Brief History of Farmers' Institutes in Ohio.

From A Brief History of the State Board of Agriculture, the State Fair, District and Agricultural Societies and Farmers' Institutes in Ohio, prepared by the State Board of Agriculture, we take the following:

The first suggestion we have been able to find relative to lectures for the benefit of the farmer, is from Dr. N. S.

Townshend. Under date of February 15, 1845, he wrote as follows:

"Had we a State Agricultural Society, with a good board of managers, or should the Legislature constitute a State Board of Agriculture, then either of these might select a sufficient number of competent individuals to lecture, after the manner of medical institutions, on all the sciences having relation with agriculture."

Under date of September 14, 1845, Dr. Townshend makes the following suggestions to the young farmers of Ohio in relation to the formation of Farmers' Clubs:

"Of the utility of such associations there can be but one opinion. With a good one in every township, the agriculture of our State might be speedily regenerated; without them, little comparatively, will be accomplished. And now the most convenient season for holding evening meetings is approaching, and must not be allowed to pass away unimproved."

Dr. Townshend suggests monthly meetings and that they be occupied with lectures, reports of committees, who shall visit the farm of each member once during the year and make a full report, and discussions.

The organization of farmers' clubs in every township was the best suggestion that could have been made under existing conditions. There were only eighty-four miles of railroad in operation in the State in 1845, which would have made the Institutes of to-day impracticable.

The Ohio State Board of Agriculture, created by an act of the General Assembly, passed February, 1846, at its second meeting, held in October of the same year, adopted resolutions "earnestly recommending the formation of township and neighborhood Farmers' Clubs,

for the purpose of mutual improvement," and "earnestly asking gentlemen possessing the requisite knowledge of science and agriculture, in different parts of the State, to assist in the work of promoting agricultural improvement, by lecturing to the farmers."

At a meeting of the State Board of Agriculture, held December, 1850, Professor Mather was appointed State Agricultural Chemist and Corresponding Secretary, and it was suggested that were it deemed necessary and could be done, "lectures on the subject of agriculture should be delivered." Other duties, however, gave the Professor very little time for the preparation or delivery of such lectures.

For a number of years, now, the subject of better education for the farmers of the State had been agitated. Men prominent in public affairs recognized its necessity and hoped the time was ripe for effort.

On December 4, 1854, a system of independent lectures was inaugurated at Oberlin, to continue for three months. Only a few young men took advantage of these lectures, so during the winter of 1855-56 they were held in Cleveland, but evidently with no better success, as they were then discontinued.

There seems to have been no further special effort, in this direction, for a number of years. But good seed had been sown. Farmers' organizations increased rapidly in number, and much valuable information was disseminated through these organizations and through the medium of the agricultural press.

In 1862, the United States Government made a grant of land to Ohio for the purpose of establishing a State Agricultural and Mechanical College. An act establishing an Agricultural and Mechanical College was passed by the General Assembly, in 1870, and it was lo-

cated at Columbus the same year. Buildings were erected as soon as possible and the College opened in 1873.

At an address delivered before the annual meeting of the State Board of Agriculture, held in 1874, Dr. Townshend said:

"What we want to do is to abandon the old idea that farming has no higher aim than getting a living, and instead of it, to adopt the better one that the chief end of farming is the culture and improvement of the farmer and his family; and while it does this it should, as a secondary result, give support and pay expenses. Farming needs a new departure, or to take a new start, and with a higher aim and purpose, so that it may secure to the farmer the same in intellectual and social position that men expect to secure through the professions of law or medicine. These professions educate men by their daily work, and so will farming, when taken hold of in earnest and in the right way."

In 1878, an effort was made to establish in the State University a course of lectures on the sciences relating to agriculture. Only seven farmers responded and the effort was abandoned for that year. The following year the matter was taken up by the Granges of the State, and when the lecture course opened in January, 1879, there were over one hundred names entered on the class register. During the second term, beginning January, 1880, the attendance was about the same as that of the previous year. A third course was held in January, 1881.

In 1880, Dr. Chamberlain, then Secretary of the State Board of Agriculture, in an address to the Board, asked for definite authority "to co-operate with county or other local agricultural societies and granges in calling and organizing Farmers' Institutes or Agricultural Conventions during the present

fall and winter." A resolution was at once adopted appropriating one thousand dollars out of the earnings of the State Fair for the purpose of inaugurating Farmers' Institutes in Ohio, and during the winter of 1880-81 the good work began.

In President Orton's report to the Board of Trustees of the State University, dated November 18, 1880, he recommends that provision be made by which Dr. Townshend could be occasionally released from college duties, in order to give this outside instruction in the Institutes, and also recommending that definite provision be made for this work.

The first year, 1880-81, there were three State lecturers and twenty-seven Institutes held in the State. But the interest manifest in these Institutes by the farmers of the State was so great that in March, 1881, the General Assembly increased the appropriation one thousand dollars, to enable the Board to continue the work.

In 1890-91, there were one hundred and twenty-four Institutes held under the auspices of the Board. In 1898-99, two hundred and fifty were held.

In addition to these a large number of independent institutes were held each year, some of which reported to the Board, but many failed to do so. In 1890-91, there were no reports made; in 1898-99, twenty reported. In 1898-99, 38 lecturers were employed by the Board.

The State Farmers' Institute held its first session in Columbus, Tuesday, January 11, 1887, and has met annually ever since. In all this work the State Board acknowledges the hearty co-operation and assistance of the Professors of Ohio State University, and officers of the Experiment Stations, as well as the assistance of prominent educators throughout the

State and from sister States; but the secretaries who planned the work should not be forgotten, for it has really been through their faithful work that the success of the Farmers' Institutes in Ohio has been made possible.

Homer Charles Price, M. Sc.

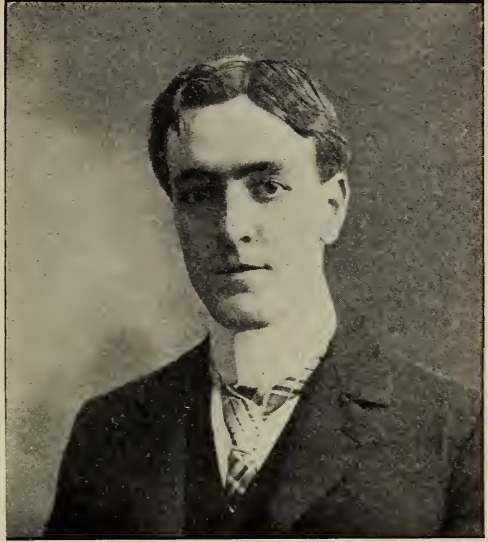
Mr. Price is without doubt one of the foremost men among the graduates from the College of Agriculture of the Ohio State University. While a student in the University he was considered by both his fellow students and his professors as one of the most dilligent and successful students in college, and his career since has in no wise been a surprise to his many friends.

Homer C. Price was born February 13, 1875, near Newark, O. He received his early education at a district school and in the fall of 1892, entered Doan Academy, Granville, O. He completed the scientific course in two years and in the fall of 1894 entered the Agricultural College at the Ohio State University. Here he completed the course in three years, graduating with the class of '97, with the degree of B.Sc., in Agriculture.

Mr. Price was always active in college affairs, but was best known as a hard working, persevering student, and success always crowned his efforts.

He was an active member of Townshend Literary Society, holding all the responsible offices in the Society, including that of President.

He was a member of THE AGRICULTURAL STUDENT staff in 1896-97, and also contributed many articles of spe-



cial interest to several of the leading agricultural journals.

After graduating at O. S. U., he returned to his father's farm, where he remained until the fall of 1898, when he received the appointment to the Fellowship in Agriculture at Cornell University, where he graduated with the class of '99, with the degree of M. Sc., in Agriculture.

He again returned to the farm, but such men as Mr. Price are wanted in the world to-day, and several flattering positions were offered him. Of these, he chose the position of Assistant in Horticulture in his Alma Mater, in order that he might be near his parents in their declining years.

For several years Mr. Price has been practical director of his father's farm, and has made a decided success in the growing of peaches and the rearing of Red Polled cattle.

His exceptional qualities and brilliancy of mind; his affable manner and fidelity to duty, make Mr. Price a man of unusual promise, and in the truest sense of the word—a man.

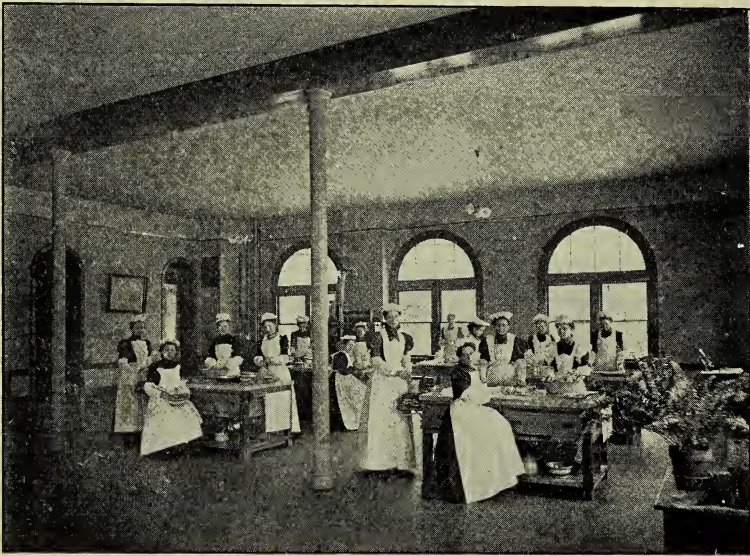
A Peep into the Domestic Science Department.

To a stranger visiting the University, one of the most interesting features is the Department of Domestic Science. It is a source of pride to the University and always elicits a great deal of admiration from visitors.

This department is located on the first floor of Hayes Hall. The spacious and airy kitchen and lecture-room occupy the entire east end of the building. The two are combined in one large sunny

each table. Every utensil necessary for the preparation or cooking of food can be found stored in its particular place at the separate tables. At one end of each table are three gas burners upon which most of the cooking is done, although the girls are taught the use of three kinds of fuel, gas, coal and charcoal.

Adjoining the lecture-room is the dining room which is simply but elegantly furnished. The sunny south windows have pretty draperies and shelter a cozy



DOMESTIC SCIENCE LABORATORY. HAYES HALL.

apartment. The south end is used by Miss Bowman as a lecture room and is provided with all the modern conveniences. Here Miss Bowman gives her lectures in connection with her work in cooking.

In the north end of the room stands the large coal range, which is used largely for baking. In the northwest corner is the sink, with all the conveniences. Adjoining this is the large cupboard and preserve closet. There are four working tables in the kitchen, for the use of the class, four girls working at

window seat. The floor is oiled and there is a large brussels drugget in the middle and several smaller rugs about. There is a complete dining room suite of oak. The sideboard is supplied with a chafing-dish and the necessary silverware and table linen. The china closet contains a set of pretty dishes. There is a dainty little tea-table at one side with appointments, and with potted plants artistically disposed about the room, the effect is charming. Here the class in cooking entertains its friends or the faculty at breakfasts or dinners and

are thus instructed in preparing menus and in serving.

Across the main hall, in the west end of the building, is the sewing and millinery department, under the supervision of Miss Souther. Here the girls are taught all kinds of sewing, from the making of a simple seam to a tailor-made dress.

This room is nicely furnished also, having a chiffonier, and a full-length mirror, and several low sewing tables and chairs and two sewing machines.

college course. Thus, it will be seen that the training of this department is in addition to the regular college work, and a graduate in this course goes forth well equipped to meet life's duties, in whichever way she turns.

M. F. H.

Interesting Cases.

A greater variety of cases have been brought to our clinic this year than usual. Our clinics usually open with a big run of fistulas, quittor, etc., which



DINING ROOM. DEPARTMENT OF DOMESTIC SCIENCE. HAYES HALL.

Miss Souther's desk and secretary and a long cutting and draughting table complete the furnishing. The northwest corner is curtained off and used as a fitting room.

From all this, a visitor is apt to suppose that the greater part of the students' time is devoted to this department. That this is by no means the case, may be readily seen by a glance at the outline of the course. In fact less than one-third of the students' time is spent on this work, the rest being devoted to the studies found in any other

have been treated here off and on during the preceding year. Many of these cases could be readily healed if we could secure the co-operation of the owners, but as a rule they were afraid of the animal and would prefer to wait a few months rather than to use a little "persuasion." The first operation of the year was a fistula as usual, but this one was remarkable in that the diseased tissue could be completely extirpated. The subject was an aged brown pony of no value whatever before the operation; but when the operation wound is healed he

will be able to do several years' work. The owner is a remarkable exception to the rule. He is taking excellent care of the animal, the wound is healing nicely and will no doubt terminate in a complete recovery. A bay mare was brought in one day with the left side of the face, from the eye down, bulged out of shape. This is not at all an uncommon occurrence in cases of diseased teeth, and of course this was suspected in this case. A careful examination of the teeth, however, revealed nothing wrong. It was decided to trephine into the sinuses, in the hope of being able to establish a diagnosis. When the operation was completed there flowed from the opening a large amount of serum with no trace whatever of pus, showing the sinuses to be non-infected. The wound is being treated at present and the termination of the case will be very interesting if we are able to keep track of it.

A fine looking 5-year-old black gelding was brought in Sept. 21st, showing most peculiar symptoms. The animal walked in an awkward manner, dragging the toes of the hind feet, peddling outward with both front feet, turning his head to the right, and all the time crowding to the left side of the road. He was an animal of fine appearance, docile and apparently above the average in intelligence. When standing tied to a post or in a stall nothing whatever would have been suspected. The owner thought his brain was affected and that he was what is known as a "dummy." He had been treating the horse for this, with the assistance of a quack, and he said that the animal had improved considerably. The animal showed none of the symptoms of a "dummy." The attitude was natural, the mind seemed clear and bright, the play of the ears and expression of the eye were that of a wide-awake, intelligent horse. The horse

was left for a further examination. He was taken out, ridden at a trot and then at a gallop. At a trot he showed all the symptoms mentioned before, but galloped much better and after being heated up at a gallop he was able to walk much better. No positive diagnosis was made, but it seems probable that the trouble is purely muscular, possibly the result of rheumatism, as no brain symptoms whatever were shown. As the animal improved under exercise the owner was advised to give him a fair amount of work, while iodide of potash and arsenic were prescribed internally. The case is very interesting and will be as closely observed as possible and progress reported.

Four cases of colic have been treated at present writing, in two of which we were able to relieve the animals, but in the other cases the patients died. One of the latter cases was one of Prof. Bohannan's fine team, which have been familiar figures on the campus for years. The mare was brought in about eight o'clock on the morning of September 18th. She did not seem to be in great distress at the time, but prompt measures were taken to relieve her. In spite of all our efforts, however, she died about three o'clock that afternoon. A very careful post mortem was made at once. This revealed a torsion of the small bowels, which were tremendously inflamed for a distance of twenty feet. There was also a rupture of the stomach, a rent fourteen inches long being found in its lower curvature, which had allowed the contents of that organ to escape into the abdominal cavity. An enormous amount of food, apparently green corn and millet, had passed out of this rent, together with a large quantity of water. The rapid fermentation of this food in the stomach, it being unable to pass out owing to the torsion of the

bowels, had ruptured it, causing the death of the animal. The other case that terminated fatally was one we were called out to see, reaching there just as the animal died. A post mortem revealed a rupture of the stomach in its lesser curvature with escape of fluid contents into abdominal cavity. This had set up an acute case of peritonitis, of which the animal died. Nothing could have been done to save either case had it been possible to make an exact diagnosis before death.

A Study of the Grasses.

(Continued from September.)

Avena elatior (Tall Meadow Oat Grass).

This is a very hardy perennial grass, starting very early in the spring and growing throughout the season until late in the fall. It reaches a height of from five to seven feet. It is indigenous to the old world where it is highly prized for its quick growth and heavy yield. When out in head it bears some resemblance to our common oats. It grows in tufts and does not form a dense sod. The stems are very coarse, which greatly lessens its value as hay. It prefers a light, loose soil as the roots penetrate deep into the soil and thus it is enabled to withstand drought. In the United States the grass is more in favor in the South than in the North.

In general the chief value of the grass lies in its hardiness, its luxuriant growth early in the spring and late in the fall and the ease with which it adapts itself to almost any soil.

Festuca elatior (Tall Fescue).

This is a perennial grass growing from two to even five feet high. It grows in tufts and bunches and has the seed in panicles four to sixteen inches long. It requires a moist soil rich in humus for its best development. It is

found pretty generally in Europe and Western Asia. Since its introduction into Western Asia it has become common in the Southern states. It is not of great economic importance in the north, but is a very promising grass for the dry lands of the west. In Great Britain it is considered a valuable grass in permanent pasture lands, being much liked by cattle and sheep and making an excellent quality of hay.

It resembles cheat very much in appearance. About twenty-eight pounds of seed should be sown per acre.

Dactylis glomerata (Orchard Grass).

This is one of the popular meadow grasses of Europe. It is a very coarse grass growing three to four feet high. It grows in large tufts. It does well on any but an excessive wet soil, and does better in the shade than any other grass. It ranks next the meadow foxtail in earliness and affords a large amount of aftermath. It yields from one to three tons of hay, depending on the season. It should be seeded thickly; about three bushels per acre, to remedy the growth in tufts. It matures about the same time as red clover. The hay is easier masticated and digested than timothy and is much preferred by sheep. It is highly valued as an early and abundant pasture grass, and early pasturing is recommended, as stock do not relish an old growth.

Festuca pratensis (Meadow Fescue).

This grass is considered by many authorities to be a variety of *Festuca elatior*. It is smaller than the latter, has finer stems and leaves and a shorter seed panicle. It also is a native of Europe and is a very hardy grass. It is not well adapted to meadows in a short rotation because it takes the plant several years to fully develop. It does as well as on lowlands. It ripens about the same time as timothy and makes an ex-

cellent hay when mixed with the latter. About two bushels of seed are sown per acre.

Solium perenne (Perennial Rye Grass).

This grass is a native of the old world and has been in cultivation in England for over two hundred years. It grows two to three feet high, is very leafy and the seed grows in panicles about six inches long. It is esteemed of great value in England where it occupies the same position as timothy does with us. It is a superior grass for irrigated meadows, but gives good satisfaction in all moist soils where early maturity and an abundant aftermath is desired.

Phleum pratensis (Timothy).

This is one of the best known and most extensively cultivated grasses in this country. It grows in tufts, the stems reaching a height of two to three feet. The seed grows in spikes from two to four inches long. It is a native of America and is the best hay grass that we have, although it is generally reputed to be hard on the land. It does well on all soils except a light, sandy soil. Our objection to it is that it furnishes very little aftermath. It should be cut just after the bloom falls off. Six to eight pounds of seed are sown in the fall along with rye or wheat, or it is sometimes sown in the spring, but is very apt to suffer from drought. It does well on prairie soil and is especially valuable in the Northwest. The seeds ripen about the middle of July. If the hay is to be fed on the farm a good practice is to mix clover seed with the timothy, as the hay is of a very fine quality, the timothy not growing so rank and coarse. It yields seed abundantly, which is very readily cleaned of all impurities and is in constant demand. Timothy grass will not stand pasturing very well as it is easily injured by tramping. In the

West it does not meet with as much favor as in the Eastern and Central States.

Poa pratensis (Blue Grass).

This is the most valuable pasture grass of the country. Its natural home seems to be the Ohio and Eastern Mississippi Valleys. It is a perennial, growing one and one-half to two feet high. The stems are fine and have an abundance of long soft leaves. It spreads by creeping root stalks and forms a very fine sward. It affords very early and late pasturage, but usually dries out during midsummer after ripening its seeds in June. It seems to do well on almost any soil, but is at its best on the limestone soils of Southern Ohio and Kentucky. Here it soon takes possession of permanent pasture without any special seeding. When seeding, a large quantity of seed is required; one and one-half to two bushels per acre, because of the low vitality of seed. It takes about three years after seeding to form a good sod.

LEGUMINOSAE.

This family ranks next to grasses in economic importance to the agriculturists. It is a of very large order, many of which are useful plants.

Several members of this order are among the farmers most valuable hay and feed crops. Unlike timothy and many of the grasses the members of this family have a very beneficial effect in storing up nitrogen in the soil. One of the most important genus is *Trifolium*, of which the most important species are:

Trifolium pratenses (Red Clover).

The stems are erect, hairy, and one to two feet long. The leaflets are oval in form, often notched at the end, and have a pale spot on the upper side. In some localities it is a biennial, in others a perennial. It has been cultivated a very long time. It does best in a temperate

climate, but will grow wherever corn is successfully grown.

It is regarded as a valuable crop in the South, especially for green manuring. It should be cut early as the quality and quantity of the hay is increased. The second crop is saved for seed. The seed is usually sown in the spring in the North, and in the fall in the South of the United States

Trifolium incarnatum (Crimson Clover).

This is an annual, growing from one to two feet high. It is adapted to soils of very light textures where other clovers do not do well. It is extensively grown in Delaware and is highly valued there. It affords early pasturage and makes a good quality of hay. It is cut for hay in May. In the South it blooms very early—April. It yields from five to fifteen bushels of seed per acre.

The Division of Botany of the United States Department of Agriculture condemns the feeding of overripe crimson clover to horses, because the hairs from the calyx form balls in the stomach and cause the death of the animal.

About sixteen pounds of seed should be sown per acre. Its chief value is as a forage crop and a green manure, but it will not withstand our winters.

Trifolium hybridum (Alsike Clover).

This clover grows about two feet high and has a pinkish white blossom. It seems to be a cross between red and white clover. The stems are smooth and it makes very fine quality of hay, but not so heavy a yield as red clover. It is adapted to light, sandy soils where red clover cannot be grown.

Trifolium repens (White Clover).

It is a low creeping perennial, with a white bloom. It is the smallest of the clovers and spreads rapidly by means of its creeping stems which root at the joints. It produces an abundance of

blossoms, rich in nectar, and hence is an excellent honey plant. Because of its small size it is of no value for hay. It is an excellent clover for sowing in pastures. Stock eat it readily, especially when mixed with the common pasture grasses. It is of more value as a flesh producer than for the production of milk. It is very valuable for fattening sheep, and should be given a prominent place in the mixtures for permanent pasture. It is a good plant for lawns, because it forms a matted growth and is not injured by repeated close clipping, and will withstand a large amount of tramping.

Medicago sativa (Lucerne or Alfalfa).

This is an upright, smooth perennial, much cultivated in the west for hay and green forage. It grows one to three feet high and roots twelve to twenty feet deep. The Greeks and Romans prized it highly as a forage plant 2500 years ago. Alfalfa requires plenty of sunlight and does best on a rich loam or sand and must have a deep, porous or gravely subsoil. It is very hard to secure a good stand as the young plants are very tender and easily killed, but when once established it will hold its own against all comers. Unlike clover it does not do well when sown with a nurse crop. The land is deeply plowed in the spring and thoroughly cultivated and pulverized. The seed is sown alone at the rate of fifteen or twenty pounds per acre. It may be sown with a light seeding of oats, but the oats must be cut about the 1st of June and the field clipped thereafter about once a month. It is a great favorite in the west because it withstands drought so well, and is well adapted to irrigated lands. It is very nutritious and under favorable conditions may be cut three to eight times in a single season, giving an enormous yield of green forage. It will probably

never be extensively cultivated north of the 38° parallel and east of the Mississippi River because other grasses and clovers thrive so well in this district. It must be cut early when just beginning to flower. Care must be taken when fed green, as it is liable to cause bloating.

C. B. STEWART.

Wheat Raising in Central Ohio.

Wheat is a crop of the temperate regions of North America without which the farmer could not well get along if he would continue to be successful. Though he finds that at times the price falls so low that there is little cash balance, it serves as a transition crop by which a cultivated field is set to grass. It occupies the ground and prevents the growth of weeds while the clover and timothy are yet small, also protecting the young plants from the blasts of winter. These considerations render a rotation in which wheat plays a part, a practical necessity.

The first question that naturally arises is the selection of the seed. As to the best variety no distinct answer can be given. This depends upon the peculiarities of soil. There are several standard varieties which do well on quite different soil, e. g., Pool Fulse, Mediterranean, etc. It is highly important, however, that the vitality of the seed be tested to be sure that it will germinate properly and all weed seed as well as fungal spores removed or killed.

One of the most common fungus diseases affecting the wheat plant is smut. This is most satisfactorily destroyed by the use of hot water. If the seed wheat is immersed in water at a temperature of 132-135° F. for twenty minutes the great majority of the spores will be killed. The best plan is to raise the temperature of the water to about 138° F. Then the introduction of the cold

water will reduce the temperature to about the right degree. This method, employed by us on infected seed, was very successful. It is not essential that the grain be perfectly dry before sowing it, and the excess of moisture insures an early germination.

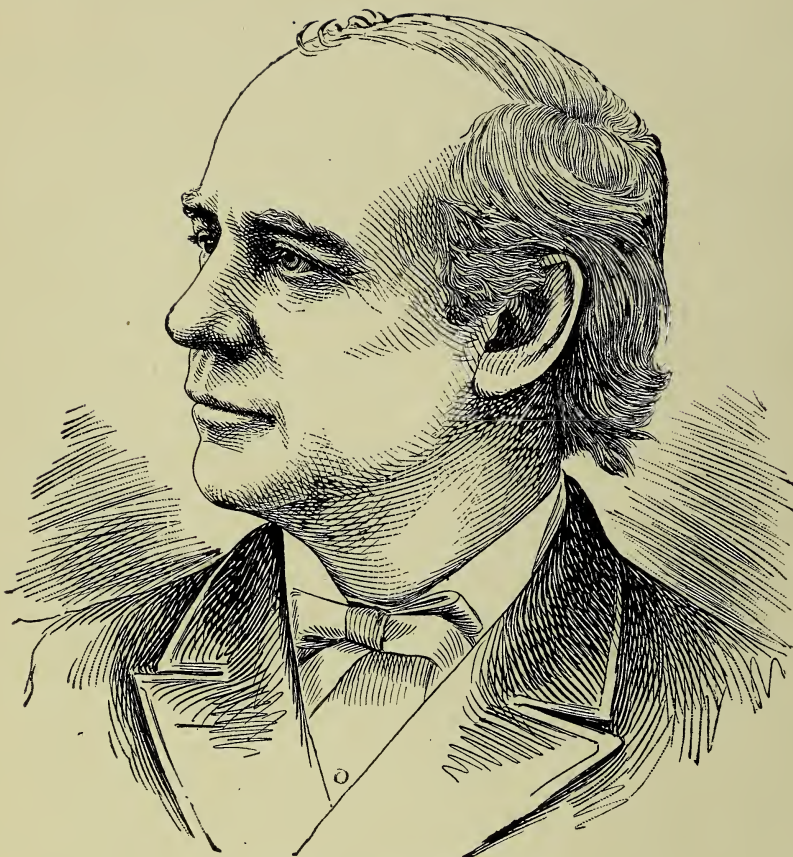
The crop is adapted to a considerable variety of climate. More than half the crop of the United States is grown where the mean annual temperature is about 55° F.

The soils best suited to the growth of wheat are those of the light clay type. They seem to furnish the conditions requisite to carry it through a severe winter or dry growing season. A river bottom soil offers less protection from the heaving action of breezes. The great wheat-raising region of the United States is the territory overrun by the glacial drift. Other factors than the soil are here introduced, however, as for example, the climate and adaptability to the use of modern machinery, both of which are necessary considerations.

(To be Continued.)

Henry A. Dreer, the wide-awake florist of Philadelphia, very kindly remembered O. S. U. during the Summer by sending us 80 varieties of fine ferns. The collection is a valuable addition to the list of plants in the Conservatory. Mr. Dreer is a progressive dealer and proposes to be second to none. This firm has been in business for over 60 years, during which time it has grown from a small beginning to the large business it now carries. Their success is due to first-class quality and fair dealings with his customers. Fine goods, fair prices, and square dealing are his strongholds.

The new ferns are to be seen at the Conservatory, where they will speak for themselves and always speak with credit for the house from which they come.



EDWARD ORTON, Ph. D., LL. D.

Born March 9, 1829.

Died October 16, 1899.

(See page 45.)